

Remarks / Arguments

In the office action,

(1) claims 1-4, 6,9 and 10 were pending and were rejected under 35 U.S.C.102 (b) as being anticipated by Dube (5,619,522) hereinafter '522;

(2) claims 7, 11 and 12 were pending and were rejected under 35 U.S.C.103 (a) as being unpatentable over '522 as applied to claim 6, and further in view of Tullock et al. (6,134,258) hereafter '258;

(3) claims 14 was pending and was rejected under 35 U.S.C.103 (a) as being unpatentable over '522 as applied to claim 6, and further in view of Zhang (2002/0105997) hereafter '997; and

(4) claims 13 was pending and was rejected under 35 U.S.C.103 (a) as being unpatentable over '522 and '997 as applied to claim 6, and further in view of Sasaya et al. (2002/0054282) hereafter '282

With respect to claims 1-14

(1) In the Office Action issued on November 23, 2007, the examiner mentioned that '522 discloses a laser gain module comprising: 1, 6. "**a laser slab** including an undoped circumambient portion [YAG431, 441]...".

However, it is well known to one skilled in the art that a slab should be a long, slim rectangular parallelepiped with cross sections which parallel to the directions of length and width/height being rectangular. While in '522, the laser cavity comprises a rod-like laser element encircled by reflecting walls having two or more sections (please refer to Fig.6 of '522). The laser cavity of this type is not a rectangular parallelepiped and thus can not be called a SLAB by one of ordinary skill in the art.

Therefore, the technical feature "**laser slab**" in claims 1 and 6 of present application is not disclosed or suggested by '522.

(2) As seen from Figs 6 and 7 of '522, the laser cavity 411 is not a rectangular parallelepiped and the sleeve [441] has a corner face [446] and".

However, in present invention, as shown on Figs 1 - 3, a laser slab (22) is a convex polyhedron having one or more corner faces (32), which is formed by cutting one or more sides of a rectangular parallelepiped, and includes an undoped circumambient portion (34) and one or more doped central portions (38),.

Obviously, the technical features “wherein said laser slab is a **a convex polyhedron having one or more corner faces, which is formed by cutting one or more sides of a rectangular parallelepiped** and includes an undoped circumambient portion (34) and one or more doped central portions (38)” in present application are not disclosed or suggested by '522.

(3) In the Office Action issued on November 23, 2007, the examiner contended that “'522 discloses joining the two pieces with an adhesive material, therefore the **final result is the same**, namely, the two elements are joined together without gaps”.

However in '522, the adhesive material between the rod-like laser element and reflecting walls has to have a refractive index nominally matching that of laser element. The material also has to have high transparency to the pump light and high thermal conductivity (please see col.5, lines 32-36 of '522). These requirements add difficulty in finding a suitable material and the structural complexity of the laser cavity is raised. In addition, the adhesive material may suffer aging effect by the radiation of the pump light.

While in present invention, as being diffusion bonded, there is no gap between the central doped portion and the circumambient undoped portion. The refractive indices of these two parts are substantially identical, which guarantee minimum losses between these two parts. This type of configuration simplifies the structure of the laser gain module and improves the reliability thereof.

Therefore, applicant holds that “**joining the two pieces with an adhesive material**” disclosed by '522 is not equivalent to “said undoped circumambient portion and said one or more doped central portions **are diffusion bonded without gaps between them**” mentioned in present invention. The technical feature “said undoped circumambient portion and said one or more doped central portions **are diffusion bonded without gaps between them**” in claims 1 and 6 of present application is not disclosed or suggested by '522.

With careful consideration of examiner's comments, to accurately reflect the protection scope of present invention, and clarify the most important difference between '522 and present

invention, and have the examiner more easily understanding the same, the applicants have amended claims 1 and 6 as indicated above.

To sum up, the technical features:

(a) “**laser slab**”;

(b) “a laser slab is **a convex polyhedron having one or more corner faces, which is formed by cutting one or more sides of a rectangular parallelepiped**”; and

(c) “**said undoped circumambient portion and said one or more doped central portions are diffusion bonded without gaps between them**” in amended claims 1 and 6 of present invention are not disclosed or suggested by ‘522, Further, these technical features are not obvious at the time the invention was made to a person skilled in the art. Therefore, as compared with ‘522, amended independent claims 1 and 6 of present invention should possess novelty and inventiveness. Further, each of dependent claims also possesses novelty and non-obviousness, at least by virtue of their dependency

CONCLUSION

Applicants have made an earnest and *bona fide* effort to clarify the issues before the Examiner and to place this case in condition for allowance. Reconsideration and allowance of all of the claims is believed to be in order, and a timely Notice of Allowance to this effect is respectfully requested.

The Commissioner is hereby authorized to charge any additional required fees from Deposit Account No. 502811, Deposit Account Name THELEN REID BROWN RAYSMAN & STEINER LLP.

Respectfully submitted,

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